

ICB PhD public presentations**USING FLUOROPOLYMERS TO DEVELOP A GOLGI ON-A-CHIP AND CLOUDS FROM-A-CHIP****Florin Niklaus Isenrich**

ICB / deMello group

Supervisor: Prof. Dr. Andrew deMello

Co-examiners: Prof. Dr. Ulrike Lohmann,
Prof. em. Dr. Markus Aebi**24/06/2022, 10.00 am, on Zoom****Meeting ID: 646 5771 4764**

Project Summary: Few would contest that the field of microfluidics has been built upon a foundation of polydimethylsiloxane (PDMS) chips. Unfortunately, due to its popularity, the inherent drawbacks and limitations of PDMS are often overlooked. Biofouling and a permeability to small molecules pose major limitations, particularly to investigations involving complex chemical and biological systems. To address these issues, we developed fluoropolymer-based microfluidic platforms as alternatives to traditional PDMS. We subsequently employed these platforms to investigate two distinct processes; namely, how biochemical reaction networks govern the eukaryotic glycosylation machinery, and which factors dictate atmospheric ice nucleation rates. Through this work we demonstrate that the innate properties of fluoropolymer-based chips enable the study of previously inaccessible processes. Furthermore, we discuss how we as a field can rethink the designs of microfluidic platforms.

CV. Florin received a BSc (2016) and MSc (2018) in interdisciplinary sciences with a focus on molecular biology and chemistry from ETH Zürich. He performed his master thesis in the group of Prof. Dr. Matthew Francis at UC Berkeley and joined the deMello group in 2018.